

When the left white paper arrived in Dec 03 that was a clear
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a sign of the need to look in detail at some of the issues that

In response to questioning from the Defence Committee in January 2000, Kevin
Tebbit of the MoD said – “the fundamental principle of nuclear deterrence is
uncertainty.” Britain has never had a policy of a nuclear trip-wire – this country has
never drawn clear red lines which if crossed would result in a nuclear response.
Amibiguity is deliberately promoted. Secrecy is not an aspect of British nuclear
policy – it is the policy. Trying to tie down the strategy is like wrestling with treacle
– it slips out of your grasp. This report tries to do two things – on the one hand it
attempts to identify and respond to some of the key arguments. On the other it looks
in detail at technical aspects of Trident – to provide some solid ground from which to
consider what is going on.

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One area where the policy of uncertainty and secrecy dominates is the question of
how dependent British nuclear weapons are on American support. Successive
governments have said that British submarines carry American missiles, but the
warheads on top of them are British – they are manufactured in this country. But this
is not completely true. In page 95 of the report there is a diagram showing the main
components of a Trident warhead, taken from photographs published by Sandia
National Laboratory in the US.

The neutron generator is a vital part – it supplies extra neutrons at the start of the
fission process. Information freely available on the internet, shows that the neutron
generators on British warheads are made by Sandia Laboratory in America. Yet when
Angus Robertson asked, in the House of Commons, in which country these neutron
generators were made, Adam Ingram refused to say. The Gas Transfer System
supplies tritium into the centre of the warhead just before it implodes. The United
States Department of Energy declassified the fact that the Gas Transfer Systems for
British warheads are filled with tritium at the Savannah River Site in Tennessee. US
Again when asked directly, the Armed Forces Minister refused to say where this work
is carried out. The Arming, Fusing and Firing System, that controls when and how
the warhead is detonated, is designed by Sandia and is almost certainly made in the
US. It is not really correct to describe this as a British warhead. It is a bit like an
aircraft, whose wings are built in one country and the engines in another. The
warhead could be better described as “Anglo-American”.

One part of the warhead that is unique is the High Explosive. The warheads on
American submarines use PBX9501, those on Royal Navy submarines use a British
explosive, EDC-37. There are several papers on EDC37 available on the internet.
Some are written by scientists at Aldermaston, but others are written by the American
Nuclear Laboratories. US research is essential to predicting the life of this explosive.
Even where the British warhead does use unique British components – American
support is essential.

The second area I have been looking at in detail is the software used to target nuclear
weapons. In 1988 a report from the National Audit Office said: “proving the
effectiveness of the system for UK purposes is dependent on the production in the UK
of software for targeting, modelling and effectiveness assessment”. In practice almost
all of this software has been made in America.

In 2002 a new Trident Fire Control System was installed on British and American
Trident submarines. The new system uses commercial Power PC computers. It can